Claims:

1. A method for preparing a supported catalyst system for olefin polymerization, comprising:

combining a dialuminoxane with a support to form a treated catalyst support;

combining a halogen substituted aryl borane with the treated catalyst support at conditions sufficient to exchange one or more ligands on the dialuminoxane for one or more ligands on the halogen substituted aryl borane while on the support to form a supported activator.

2. The method of claim 1, wherein the dialuminoxane is selected from the group consisting of tetraethyldialuminoxane, di-isobutylaluminoxane, di-octylaluminoxane, di-butylaluminoxane, di-t-butylaluminoxane, and mixtures thereof.

3. The method of claim 1, wherein the dialuminoxane is tetraethyldialuminoxane.

4. The method of claim 1, wherein the halogen substituted aryl borane comprises trisperfluorophenylborane.

5. The method of claim 1, wherein the supported activator is represented by the formula:

$$Z\text{–}R'\text{–}Al\text{–}O\text{–}Al\text{–}R'_n$$

wherein Z is a polymeric support, R' is independently selected from an alkyl group having 1-20 carbon atoms and an aryl halogen group, and n is 2.

6. The method of claim 5, wherein the aryl halogen group is a halogenated C_6 or higher carbon number polycyclic aromatic hydrocarbon or aromatic ring assembly in which two or more rings are joined directly to one another or together.

7. The method of claim 1, further comprising reacting the supported activator with one or more polymerization catalysts wherein at least one of the polymerization catalysts is represented by the formula:

$$Cp^ACp^BMX_n$$

wherein:

M is a metal atom;

Cp^A and Cp^B are each independently an unsubstituted or substituted cyclic ring group;

X is a leaving group; and

n is zero or an integer from 1 to 4.

8. The method of claim 7, wherein Cp^A and Cp^B are each independently selected from the group consisting of cyclopentadienyl, indenyl, combinations thereof, and derivatives thereof.

9. The method of claim 7, wherein Cp^A is a cyclopentadienyl group and Cp^B is an indenyl group.

10. The method of claim 7, wherein Cp^A is a cyclopentadienyl group and Cp^B is an indenyl group and the one or more polymerization catalysts comprises a bridging group A, bridging Cp^A and Cp^B.

11. The method of claim 7, wherein Cp^A is a cyclopentadienyl group and Cp^B is a cyclopentadienyl group.

12. The method of claim 7, wherein M is zirconium and X is a methyl group.

13. The method of claim 7, wherein X is selected from the group consisting of amines, phosphones, ethers, carboxylates, dienes, hydrocarbyl radicals having from 1 to 20 carbon atoms, hydrides, halogens, combinations thereof, and derivatives thereof, and wherein n is 2.

14. The method of claim 1, further comprising reacting the supported activator with one or more polymerization catalysts selected from the group consisting of metallocenes, Group 15 containing compounds, phenoxide transition metal compositions, Group 5 or 6 metal imido complexes, bridged bis(arylamido) Group 4 compounds, derivatives thereof, and combinations thereof.

15. The method of claim 1, further comprising reacting the supported activator with one or more polymerization catalysts comprising $(1,3\text{-MeBuCp})_2ZrMe_2$.

16. The method of claim 1, wherein the dialuminoxane and the halogen substituted aryl borane are combined in an amount such that a molar ratio of aluminum atoms to boron atoms is from 5:1 to 50:1.

17. A catalyst composition, comprising:

a reaction product of a dialuminoxane and a halogen substituted aryl borane, wherein the reaction takes place on a support and at conditions sufficient to exchange one or more ligands on the dialuminoxane for one or more ligands on the halogen substituted aryl borane while on the support.

18. The catalyst composition of claim 17, wherein the dialuminoxane is selected from the group consisting of tetraethyldialuminoxane, di-isobutylaluminoxane, di-octylaluminoxane, di-butylaluminoxane, di-t-butylaluminoxane, and mixtures thereof.

19. The catalyst composition of claim 17, wherein the dialuminoxane is tetraethyldialuminoxane.

20. The catalyst composition of claim 17, wherein the halogen substituted aryl borane comprises trisperfluorophenylborane.

21. The catalyst composition of claim 17, wherein the reaction takes place at atmospheric pressure and a temperature of from 50 C to 250 C.

22. A polymer produced utilizing the catalyst composition of claim 17.

23. A method for olefin polymerization, comprising:

combining a dialuminoxane with a support to form a treated catalyst support;

combining a halogen substituted aryl borane with the treated catalyst support at conditions sufficient to exchange one or more ligands on the dialuminoxane for one or more ligands on the halogen substituted aryl borane while on the support to form a supported activator;

reacting the supported activator with a polymerization catalyst to form a supported catalyst system;

introducing the supported catalyst system and one or more monomers into a reactor; and

polymerizing the one or more monomers within the reactor to form a polymer product.

24. The method of claim 23, wherein the dialuminoxane is selected from the group consisting of tetraethyldialuminoxane, di-isobutylaluminoxane, di-octylaluminoxane, di-butylaluminoxane, di-t-butylaluminoxane, and mixtures thereof.

25. The method of claim 23, wherein the halogen substituted aryl borane comprises trisperfluorophenylborane.

26. The method of claim 23, wherein the one or more monomers is selected from the group consisting of ethylene, propylene, butene, pentene, hexene, and combinations thereof.

27. The method of claim 23, wherein the conditions comprise atmospheric pressure at a temperature of from 50 C to 250 C.